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PATENT APPLICATION

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Docket No.: OT-4465  
Terry M. Robar et al. : Date: August 22, 2002  
Appln. No.: 09/280,637 : Group Art: 2862  
Filing Date: March 29, 1999 : Examiner: W. Snow

Title: METHOD AND APPARATUS FOR MAGNETIC DETECTION  
OF DEGRADATION OF JACKETED ELEVATOR ROPE (as Amended)

Commissioner for Patents  
Washington, DC 20231

Sir:

RESPONSE

In response to the Office Action mailed May 24, 2002, Applicants request reconsideration of the above-identified application for the reasons set forth below.

Claims 1-33 are pending, of which claims 21-31 have been withdrawn. Claims 1, 4-6, 10 and 32 are independent.

Initially, Applicants gratefully acknowledge the Examiner's allowance of claims 5 and 32, as well as the indication that claims 18-20 would be allowable if rewritten in independent form. Applicants have not so rewritten claims 18-20 at this time because Applicants believe that independent claim 10, from which claims 18-20 depend, is allowable for the reasons set forth below.

In the Office Action, claims 1-4, 6-12, 14-17 and 33 are rejected under 35 USC §102(b) as allegedly being anticipated by US Patent No. 4,439,731 (Harrison). Claim 13 is rejected under 35 USC §103(a) as being unpatentable over Harrison. These rejections are respectfully traversed.

Each of independent claims 1, 4 and 6 recites a method of detecting degradation of a rope comprising a body of non-ferromagnetic insulator material in which a

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plurality of longitudinally extended ferromagnetic cord members is distributed transversely. Each method includes, *inter alia*, monitoring magnetic flux at a position between two poles. The methods of claims 1 and 6 includes identifying, based on the magnetic flux monitored at the position between the poles, locations along the cord members exhibiting magnetic flux leakage, wherein the locations are indicative of degradation. The method of claim 4 includes identifying, based on magnetic flux monitored at the position between the poles, points in time in which the cord members exhibit magnetic flux leakage, wherein the points in time are indicative of the location of rope degradation.

Harrison, on the other hand, discloses creating a magnetic field B that passes longitudinally from field windings 6 (at one pole) through the cords 11 to sensing windings 7 (at the other pole). Amplitude changes in the outputs of the sensing windings 7 (at the other pole) are a direct indication of the change of the reluctance between the poles, which is indicative of cord deterioration. Harrison does not disclose or suggest the feature, recited in each of claims 1, 4 and 6, of monitoring magnetic flux at a position between two magnetic poles. Nor does Harrison disclose or suggest identifying locations exhibiting magnetic flux leakage, as recited in claims 1 and 6, or identifying points in time in which the cords exhibit magnetic flux leakage, as recited in claim 4.

Similarly, Independent claim 10 recites an apparatus for detecting degradation of a rope comprising a rope body of non-ferromagnetic insulator material encasing at least one longitudinally extended ferromagnetic component. The apparatus includes, *inter alia*, magnetic flux sensing means for monitoring magnetic flux that is emanating from the ferromagnetic component out through the rope body at a position between the poles and is associated with the magnetic field.

As noted earlier, Harrison discloses detecting amplitude changes in the outputs of the sensing windings 7 (at a pole 5). Harrison does not disclose or suggest the features, recited in claim 10, of magnetic flux sensing means for monitoring magnetic flux that is emanating from the ferromagnetic component out through the rope body at a position between the poles.

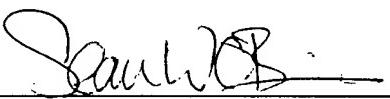
Therefore, Applicants submit that independent claims 1, 4, 6 and 10 patentably define the invention over the cited art.

The dependent claims, which are submitted to be allowable for the same reasons, also include features in addition to those recited in their respective base claims. For example, claim 2 recites that the magnetic circuit is created by relative movement between the rope and poles, whereas Harrison creating magnetic fields with field coils. Claims 7-9 recite measuring the magnitude of flux leakage, which as noted Harrison does not disclose detecting at all. Claim 17 recites positioning flux sensors on opposing sides of the rope, whereas Harrison does not disclose flux sensors at all. Further independent consideration of the dependent claims is requested.

The application is submitted to be in condition for allowance. Favorable consideration and early passage to issue are requested.

Please charge any deficiency in fees associated with filing this response to our Deposit Account No. 15-0750, Order No. OT-4465.

Respectfully submitted,

By   
Sean W. O'Brien  
Registration No. 37,689

Otis Elevator Company  
Intellectual Property Department  
10 Farm Springs  
Farmington, CT 06032  
(860) 676-5760